

- 28 -

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

## (i) APPLICANT:

(A) NAME: Imperial Cancer Research Technology Limited  
(B) STREET: Sardinia House, Sardinia Street,  
(C) CITY: London  
(D) STATE: England  
(E) COUNTRY: Great Britain  
(F) POSTAL CODE (ZIP): WC2A 3NL  
(G) TELEPHONE: 0171 242 1136  
(H) TELEFAX: 0171 831 4991

(ii) TITLE OF INVENTION: Chemical Compounds

(iii) NUMBER OF SEQUENCES: 79

## (iv) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

## (vi) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: GB 9708676.3  
(B) FILING DATE: 30-APR-1997

## (2) INFORMATION FOR SEQ ID NO: 1:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

Leu Xaa Xaa Leu Leu  
1 5

## (2) INFORMATION FOR SEQ ID NO: 2:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

Pro Gln Ala Gln Gln Lys Ser Leu Leu Gln Gln Leu Leu Thr  
1 5 10

## (2) INFORMATION FOR SEQ ID NO: 3:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

- 29 -

Lys Leu Val Gln Leu Thr Thr Thr  
1 5

## 5 (2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:  
10 (A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

Ile Leu His Arg Leu Leu Gln Glu  
1 5

## 20 (2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:  
25 (A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

Leu Leu Gln Gln Leu Leu Thr Glu  
1 5

## 35 (2) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:  
40 (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Tyr Leu Glu Gly Leu Leu Met His Gln Ala  
1 5 10

## 50 (2) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:  
55 (A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

Leu Leu Ala Ser Leu Leu Gln Ser  
1 5

## 65 (2) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:  
70 (A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single

- 30 -

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

His Leu Lys Thr Leu Leu Lys Lys Ser  
1 5

10 (2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

15 (A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

Gln Leu Ala Leu Leu Leu Ser Ser  
1 5

25 (2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

30 (A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Leu Leu Leu His Leu Leu Lys Ser Gln  
1 5

40 (2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

45 (A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

Val Thr Leu Leu Gln Leu Leu Leu Gly  
1 5

55 (2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

60 (A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

Val Leu Gln Leu Leu Leu Gly Asn  
1 5

70 (2) INFORMATION FOR SEQ ID NO: 13:

- 31 -

- 5 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:  
Leu Leu Ser Arg Leu Leu Arg Gln  
1 5
- 15 (2) INFORMATION FOR SEQ ID NO: 14:
- 20 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:  
Val Leu Lys Gln Leu Leu Leu Ser Glu Asn  
1 5 10
- 30 (2) INFORMATION FOR SEQ ID NO: 15:
- 35 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:  
Val Leu Lys Gln Leu Leu Leu Ser  
1 5
- 45 (2) INFORMATION FOR SEQ ID NO: 16:
- 50 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:  
Glu Leu Ala Glu Leu Leu Ser Ala Asn  
1 5
- 60 (2) INFORMATION FOR SEQ ID NO: 17:
- 65 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 70 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

- 32 -

Ser Leu Gly Pro Leu Leu Leu Glu  
1 5

## 5 (2) INFORMATION FOR SEQ ID NO: 18:

- 10 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

Lys Leu Val Gln Leu Leu Thr Thr Thr  
1 5

## 20 (2) INFORMATION FOR SEQ ID NO: 19:

- 25 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

Ile Leu His Arg Leu Leu Gln Glu  
1 5

## 35 (2) INFORMATION FOR SEQ ID NO: 20:

- 40 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

Leu Leu Arg Tyr Leu Leu Asp Lys  
1 5

## 50 (2) INFORMATION FOR SEQ ID NO: 21:

- 55 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

Gln Leu Asp Glu Leu Leu Cys Pro Pro  
1 5

## 65 (2) INFORMATION FOR SEQ ID NO: 22:

- 70 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single

- 33 -

- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:
- Leu Leu Gln Gln Leu Leu Thr Glu  
1 5
- 10 (2) INFORMATION FOR SEQ ID NO: 23:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
15 (B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:
- Gln Leu Ser Glu Leu Leu Arg Gly  
1 5
- 25 (2) INFORMATION FOR SEQ ID NO: 24:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
30 (B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:
- Val Leu Lys Gln Leu Leu Leu Ser Glu Asn  
1 5 10
- 40 (2) INFORMATION FOR SEQ ID NO: 25:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
45 (B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:
- Ala Leu Lys Gln Leu Leu Leu Ser Glu  
1 5
- 55 (2) INFORMATION FOR SEQ ID NO: 26:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
60 (B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:
- Val Ala Lys Gln Leu Leu Leu Ser Glu  
1 5
- 70 (2) INFORMATION FOR SEQ ID NO: 27:

- 34 -

- 5 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:  
Val Val Lys Gln Leu Leu Ser Glu  
1 5
- 15 (2) INFORMATION FOR SEQ ID NO: 28:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
20 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:  
Val Leu Lys Gln Ala Leu Leu Ser Glu  
1 5
- 30 (2) INFORMATION FOR SEQ ID NO: 29:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
35 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:  
Val Leu Lys Gln Val Leu Leu Ser Glu  
1 5
- 45 (2) INFORMATION FOR SEQ ID NO: 30:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
50 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:  
Val Leu Lys Gln Leu Ala Leu Ser Glu  
1 5
- 60 (2) INFORMATION FOR SEQ ID NO: 31:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
65 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 70 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

- 35 -

Val Leu Lys Gln Leu Val Leu Ser Glu  
1 5

5 (2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

Val Leu Lys Gln Leu Leu Ala Ser Glu  
1 5

20 (2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

Tyr Leu Glu Gly Leu Leu Met His Gln Ala Ala  
1 5 10

35 (2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

Leu Leu Ala Ser Leu Leu Gln Ser Glu Ser Ser  
1 5 10

50 (2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

His Leu Lys Thr Leu Leu Lys Lys Ser Lys Val  
1 5 10

65 (2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single

70



- 36 -

- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:
- Gln Leu Ala Leu Leu Leu Ser Ser Glu Ala His  
1 5 10
- 10 (2) INFORMATION FOR SEQ ID NO: 37:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
15 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:
- Leu Leu Leu His Leu Leu Lys Ser Gln Thr Ile  
1 5 10
- 25 (2) INFORMATION FOR SEQ ID NO: 38:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
30 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:
- Leu Leu Gln Leu Leu Leu Gly His Lys Asn Glu  
1 5 10
- 40 (2) INFORMATION FOR SEQ ID NO: 39:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
45 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:
- Val Leu Gln Leu Leu Leu Gly Asn Pro Lys Gly  
1 5 10
- 55 (2) INFORMATION FOR SEQ ID NO: 40:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
60 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:
- Leu Leu Ser Arg Leu Leu Arg Gln Asn Gln Asp  
1 5 10
- 70 (2) INFORMATION FOR SEQ ID NO: 41:

- 37 -

- 5 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:  
Val Leu Lys Gln Leu Leu Ser Glu Asn Cys  
1 5 10
- 15 (2) INFORMATION FOR SEQ ID NO: 42:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
20 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:  
Lys Leu Val Gln Leu Leu Thr Thr Thr Ala Glu  
1 5 10
- 30 (2) INFORMATION FOR SEQ ID NO: 43:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
35 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:  
Ile Leu His Arg Leu Leu Gln Glu Gly Ser Pro  
1 5 10
- 45 (2) INFORMATION FOR SEQ ID NO: 44:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
50 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:  
Leu Leu Arg Tyr Leu Leu Asp Lys Asp Glu Lys  
1 5 10
- 60 (2) INFORMATION FOR SEQ ID NO: 45:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
65 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 70 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

- 38 -

Leu Leu Gln Gln Leu Thr Glu  
1 5

## 5 (2) INFORMATION FOR SEQ ID NO: 46:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
10 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

Lys Leu Leu Gln Leu Leu Thr Thr Lys Ser Asp  
1 5 10

## 20 (2) INFORMATION FOR SEQ ID NO: 47:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
25 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

Ile Leu His Arg Leu Leu Gln Asp Ser Ser Ser  
1 5 10

## 35 (2) INFORMATION FOR SEQ ID NO: 48:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
40 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

Leu Leu Arg Tyr Leu Leu Asp Lys Asp Asp Thr  
1 5 10

## 50 (2) INFORMATION FOR SEQ ID NO: 49:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
55 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

Gln Leu Ser Glu Leu Leu Arg Gly Gly Ser Gly  
1 5 10

## 65 (2) INFORMATION FOR SEQ ID NO: 50:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
70 (C) STRANDEDNESS: single

- 39 -

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

Gln	Leu	Val	Leu	Leu	Leu	His	Ala	His	Lys	Cys
1			5						10	

10 (2) INFORMATION FOR SEQ ID NO: 51:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

15

(ii) MOLECULE TYPE: peptide

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

Gln	Leu	Ser	Glu	Leu	Leu	Arg	Gly	Ser	Ser	Pro
1			5						10	

25 (2) INFORMATION FOR SEQ ID NO: 52:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

30

(ii) MOLECULE TYPE: peptide

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

Gln	Leu	Val	Leu	Leu	Leu	His	Ala	His	Lys	Cys
1			5						10	

40 (2) INFORMATION FOR SEQ ID NO: 53:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

45

(ii) MOLECULE TYPE: peptide

50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

Ile	Leu	Thr	Ser	Leu	Leu	Leu	Asn	Ser	Ser	Gln
1				5					10	

55 (2) INFORMATION FOR SEQ ID NO: 54:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

60

(ii) MOLECULE TYPE: peptide

65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

Met	Leu	Met	Asn	Leu	Leu	Lys	Asp	Asn	Pro	Ala
1			5						10	

70 (2) INFORMATION FOR SEQ ID NO: 55:

- 40 -

- 5 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:  
Thr Leu Arg Ser Leu Leu Leu Asn Pro His Leu  
1 5 10
- 15 (2) INFORMATION FOR SEQ ID NO: 56:
- 20 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:  
Arg Leu Ala Val Leu Leu Pro Gly Arg His Pro  
1 5 10
- 30 (2) INFORMATION FOR SEQ ID NO: 57:
- 35 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:  
Glu Leu His Asn Leu Leu Glu Val Val Ser Gln  
1 5 10
- 45 (2) INFORMATION FOR SEQ ID NO: 58:
- 50 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:  
Thr Leu Arg Asp Leu Leu Thr Thr Thr Ala Gly  
1 5 10
- 60 (2) INFORMATION FOR SEQ ID NO: 59:
- 65 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 70 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

- 41 -

Phe Leu Asp Phe Leu Leu Gly Phe Ser Ala Gly  
1 5 10

## 5 (2) INFORMATION FOR SEQ ID NO: 60:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
10 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

Val Leu Glu Leu Leu Arg Ala Gly Ala Asn  
1 5 10

## 20 (2) INFORMATION FOR SEQ ID NO: 61:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
25 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

Ile Leu Ala Arg Leu Leu Arg Ala His Gly Ala  
1 5 10

## 35 (2) INFORMATION FOR SEQ ID NO: 62:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
40 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

Ala Leu Gln Asp Leu Leu Arg Thr Leu Lys Ser  
1 5 10

## 50 (2) INFORMATION FOR SEQ ID NO: 63:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
55 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

## 60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

Ala Leu Gln Asn Leu Leu Arg Thr Leu Arg Ser  
1 5 10

## 65 (2) INFORMATION FOR SEQ ID NO: 64:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
70 (C) STRANDEDNESS: single

- 42 -

- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:
- Lys Leu Leu Gln Leu Leu Thr Cys Ser Ser Asp  
1 5 10
- 10 (2) INFORMATION FOR SEQ ID NO: 65:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
15 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:
- Ile Leu His Lys Leu Leu Gln Asn Gly Asn Ser  
1 5 10
- 25 (2) INFORMATION FOR SEQ ID NO: 66:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
30 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:
- Leu Leu Arg Tyr Leu Leu Asp Arg Asp Asp Pro  
1 5 10
- 40 (2) INFORMATION FOR SEQ ID NO: 67:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 amino acids  
(B) TYPE: amino acid  
45 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:
- Gln Leu Tyr Ser Leu Leu Gly Gln Phe Asn Cys  
1 5 10
- 55 (2) INFORMATION FOR SEQ ID NO: 68:
- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
60 (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:
- Glu Leu Glu Asn Leu Leu Gln Gln Gly Gly  
1 5 10
- 70 (2) INFORMATION FOR SEQ ID NO: 69:

- 43 -

- 5 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:  
Val Leu Gln Lys Leu Leu Lys Glu Lys Asp  
1 5 10
- 15 (2) INFORMATION FOR SEQ ID NO: 70:
- 20 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:  
Glu Leu Asn Gln Leu Leu Asn Ala Val Lys  
1 5 10
- 30 (2) INFORMATION FOR SEQ ID NO: 71:
- 35 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:  
Val Leu Lys Asp Leu Leu Lys Gln  
1 5 10
- 45 (2) INFORMATION FOR SEQ ID NO: 72:
- 50 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:  
Pro Gln Ala Gln Gln Lys Ser Leu Leu Gln Gln Ala Ala Thr  
1 5 10
- 60 (2) INFORMATION FOR SEQ ID NO: 73:
- 65 (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- 70 (ii) MOLECULE TYPE: peptide



- 44 -

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

Ser Gln Thr Ser His Lys Leu Val Gln Leu Leu Thr Thr Thr  
1 5 10

5

(2) INFORMATION FOR SEQ ID NO: 74:

(i) SEQUENCE CHARACTERISTICS:

10

- (A) LENGTH: 13 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

Thr Ala Arg His Lys Ile Leu His Arg Leu Leu Gln Glu  
1 5 10

20

(2) INFORMATION FOR SEQ ID NO: 75:

(i) SEQUENCE CHARACTERISTICS:

25

- (A) LENGTH: 13 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

Ser Lys Asp His Gln Leu Leu Arg Tyr Leu Leu Asp Lys  
1 5 10

35

(2) INFORMATION FOR SEQ ID NO: 76:

(i) SEQUENCE CHARACTERISTICS:

40

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

45

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

Gln Ala Gln Gln Lys Ser Leu Leu Gln Gln Leu Leu Thr Glu  
1 5 10

50

(2) INFORMATION FOR SEQ ID NO: 77:

(i) SEQUENCE CHARACTERISTICS:

55

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

60

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

GAATTCCTGC AGCCCGGGGT CGACACTAGT TAACTAGCGG CCGC

44

65 (2) INFORMATION FOR SEQ ID NO: 78:

(i) SEQUENCE CHARACTERISTICS:

70

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

- 45 -

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

AAGCTTCCAC CATGGTGCCA AAGAAGAAAC GTAAAGTT

38

10 (2) INFORMATION FOR SEQ ID NO: 79:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 38 base pairs

(B) TYPE: nucleic acid

15 (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

TCTAGACTGC AGACTAGTAG ATCTCCCGGG GCGGCCGC

38

(2) INFORMATION FOR SEQ ID NO: 80:

25 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

30 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

35 Glu Phe Leu Gln Pro Gly Val Asp Thr Ser  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 81:

40 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

45 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

50 Met Val Pro Lys Lys Lys Arg Lys Val  
1 5